Screen and Pathway Standards for Interfacing

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INTRODUCTION

Clinical computing system architects face many challenges. Designers may integrate departmental systems across an enterprise or may provide interfaces between systems [1]. Replacement of existing departmental systems with a fully integrated institutional system is expensive. In addition, departments are frequently reluctant to sacrifice specialized functions. Finally, hospitals and other enterprises can install "off the shelf" systems faster than they can create their own integrated systems. Therefore, hospitals usually interface systems to some degree.

DATABASE VS.PATHWAY INTERFACE

Database interfaces can link departmental databases (e.g., lab, radiology, transcription) to a common clinical database (the *clinical repository).* This arrangement allows a common user interface to the clinical data in the repository. A single database, however, may not be capable of storing and retrieving all the varied types of clinical data (e.g., numerical tables, text, images). Therefore, the clinical repository frequently consists of more than a single database type. Because screen consistency is important to users [2], these heterogenous databases must be interfaced at the *pathway level.*

PATHWAY STANDARDS

A pathway is a set of menus, screens and links that appear united to the user. An interface at the pathway level requires rapid response between heterogeneous elements of the pathway. Also, the various pathway screens should offer consistency.

THE WISCR IMPLEMENTATION

At the University of Wisconsin we have created a clinician's pathway. This pathway is used heavily (more that 16,000 times per month). Lab, radiology reports, surgical pathology reports, clinic notes, admission notes, and operative notes are stored in the clinical repository, which was created with the SMS Lifetime Clinical Record software along with Inquire, by Info Data. Electronic mail service is provided with EMC2/TAO by Fischer. Electronic reference material is provided with the Computerized Clinical Information System by Micromedex.

The clinicians at the University of Wisconsin access this pathway across heterogeneous terminal and workstation platforms. We have optimized the uniformity between workstation platforms and between software packages. Uniformity for function keys such as *help, previous screen, scroll up, and scroll down* was achievable, because vendors have followed SAA CUA standards [3].

References

[1]. H. Bleich., W Slack. Designing a Hospital Information System: A Comparison of Interfaced and Integrated Systems. M.D. Computing., Vol. 9, No. 5, 1992.

[2] Guidelines for Designing User Interface Software. The Mitre Corporation., National Technical Information Service., 1986. (ESD-TR-86-278, ADA 177 198)

[3] W. Galitz. User-Interface Screen Design. QED Publishing Group., Wellesley, AM, 1993.

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